Innovations in practice

Innovations in Practice: evaluating clinical outcome and service utilisation in an AMBIT-trained Tier 4 child and adolescent mental health service

Short running title (40 characters): Outcome and service use in Tier IV CAMHS

Authors: Helen Griffiths[1,2], Abbi Noble[1], Fiona Duffy[1,2], Matthias Schwannauer[1,2]

[1] Child and Adolescent Mental Health Services, NHS Lothian, Scotland, UK
[2] Department of Clinical and Health Psychology, School of Health in Social Science, University of Edinburgh, Edinburgh, UK

Author for correspondence: Dr Helen Griffiths
Department of Clinical and Health Psychology
School of Health in Social Science
Doorway 6, Old Medical School
Teviot Place
Edinburgh
Scotland
UK
EH8 9AG

Tel: (+44) 131 6503482
Email: Helen.Griffiths@ed.ac.uk

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Abstract

Aim: To present clinical outcome data of the AMBIT-trained NHS Lothian Tier 4 child and adolescent mental health service in the context of service utilisation and engagement.

Method: Data was obtained for a two-year period that included details of all face-to-face contacts between young people and clinicians along with routinely collected clinical outcomes data relating to anxiety, depression, symptoms of psychosis and quality of life.

Results: Improvements were observed in quality of life, symptoms and distress across the course of the intervention. Overall attendance rates were high (80%). Relative to those who were better engaged, the less well engaged group received the same number of appointments but spent longer in the service (Chi^2 (1) 5.26, p = .022), had more professionals involved in their care (Chi^2 (1) 4.91, p = .027) and showed a non-significant trend to more in-patient admissions. Later engagement was not associated with distress or symptoms at entry into the service with the exception of negative symptoms in the EPSS cohort. Age and two quality of life factors were associated with later engagement (p<.05).

Conclusions: Our AMBIT-trained Tier IV CAMH service demonstrates change over the course of intervention consistent with the service model's theoretical expectations. Engagement with the service may be associated more with factors related to social circumstance and functioning than with key symptoms and distress. Less well engaged young people utilise increased service resource. AMBIT's mentalizing focus may improve service provision for young people who are poorly engaged with mental health services.

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Keywords: adolescence, engagement, mental health, service development, outcome

Key practitioner message:

- Locally developed practice-based evidence can be used to illustrate clinical change over the course of Tier IV CAMHS interventions
- Service engagement may be associated with baseline variables relating to social context and functioning rather than emotional distress and symptoms.

- Failure to successfully engage young people may result in increased service utilization
- AMBIT provides a theoretical and pragmatic service model which may improve service engagement for hard-to-reach young people

Introduction

Tier 4 CAMH services in the UK provide specialist interventions for young people with the most complex mental health problems who are also likely to experience social/interpersonal adversities that make accessing appropriate support difficult. Despite significant investment, evidence for the effectiveness of existing models of service delivery, typically consisting of a 'mixed economy' of inpatient, home-based and community outreach services (McDougall et al, 2008), is scarce. NHS Lothian Tier 4 outpatient services have adopted AMBIT (Adolescent Mentalization-Based Integrative Treatment; Bevington et al, 2013), which provides an overarching ~~theoretical~~ framework for the delivery of multi-modal interventions using mentalization as the organizing principle. Central to the success of this approach is the relationship between keyworker and young person. ~~We adopt~~ AMBIT further ~~'s~~ emphasizes the productions ~~of~~n locally developed practice-based evidence ~~in order to characterize the service~~ (Fuggle et al, 2014). ~~Seeking to~~Here, we contextualize our outcomes within patterns of service utilization and~~,~~ ~~we~~ consider ~~implications for the challenges of engagement within our service delivery model.~~AMBIT's influence on our response to challenges of service engagement.

Although three-quarters of long-term mental health problems are known to have developed by 24 years (Kessler et al, 2005), young people seem reluctant to seek professional help (Michelmore & Hindley, 2012). This ambivalence continues after contact with mental health services, with drop-out from CAMHS between 28-75% (De Haan et al, 2013). That is, when young people most need help, they are unlikely to seek or maintain contact with formal mental health support. Attrition results in poorer outcome and significant personal costs, but also prolongs CAMHS waiting times (Johnson, Mellor, & Brann 2009), reducing service efficiency. The interplay between service delivery, engagement and outcome is therefore a key concern.

Successful engagement enhancement programmes within CAMHS suggest strategies that promote the development of therapeutic alliances (e.g. Watt et al, 2012). ~~Such approaches are consistent with the theoretical framework of~~The ~~the~~ family of mentalization-based therapies to which AMBIT belongs similarly emphasise the centrality of engagement. Rooted in attachment theory, mentalization is the capacity to attend to 'mind' in ourselves and others in order to predict behaviour in terms of ~~needs, desires, affect, beliefs and other~~ intentional mental states (Fonagy & Target, 1997). Its developmental origins highlight the on-going vulnerability of ~~the capacity to~~ mentalizing capacity~~e~~ to

the emotional salience of interpersonal contexts. Whilst mentalizing failures undermine relationships, secure attachments provide a safe platform for mentalization, allowing interpersonal misunderstandings to be resolved. Delayed/ambivalent help-seeking may then be seen as the result of compromised mentalization in the context of feeling unsafe, presenting a considerable challenge to services that rely on individuals to seek help when they feel most vulnerable.

AMBIT, a team approach, has been fully described elsewhere (Bevington et al., 2013). Briefly, ~~which places~~ enormous significance is placed on promoting the young person's mentalizing capacity through ~~the therapeutic~~individual relationships with ~~a~~ keyworkers, recognising the challenges inherent in this. Clinicians' own mentalizing capacity is supported via organizing the 'team around the worker'. Mentalization is further promoted ~~has been fully described elsewhere (Bevington et al., 2013). AMBIT also acknowledges the complexity of the interpersonal settings in which many clinicians work, seeking to promote mentalizing~~ across wider social/professional networks surrounding the young person, to prevent 'system disintegration'. Sustaining mentalization is considered essential for effective clinical decision making in high-risk scenarios.

This observational study characterises our AMBIT-trained Tier IV service, which includes day programmes, assertive outreach teams and a regional inpatient unit, in terms of routinely collected clinical outcome and service utilisation data. NHS Lothian serves a population of 160,379 young people under 18 years. Clinical presentations include depression, eating disorders and psychosis. We also explored differences between those young people who were better or less well engaged. Implications for service delivery are considered within the AMBIT framework.

Method

The Anna Freud Centre provided AMBIT training ~~was provided by the Anna Freud Centre~~ over 4 days for all non-inpatient, over 12s Tier 4 staff.

Data was extracted for all cases seen within three ~~the assertive outreach~~ teams (Intensive Treatment Service (ITS), ~~and~~ Early Psychosis Support Service (EPSS)~~)~~ and Tipperlinn Day Programme) between 2011-2012. Service data (via NHS Lothian Patient Information Management System (PiMS)) was available for 302 young people accepted for treatment within the service.

Engagement was calculated as the percentage of kept appointments. Clinical outcomes data was available for 161 young people and could be linked to service related data on 133 occasions. All teams administered the World Health Organisation Quality of Life – BREF questionnaire (WHOQOL-BREF; WHOQOL Group, 1998). The ITS & Day Programme used varying subscales from the Beck Youth Inventories (BYI; Beck, Beck, Jolly, & Steer, 2005). EPSS routinely administered the Positive and Negative Syndrome Scale (PANSS; Kay, Fiszbein & Opler, 1987) and the Beck Depression Inventory - II (BDI-II; Beck, Steer, & Brown, 1996). The South East of Scotland Research Ethics Service confirmed that this service evaluation did not require formal ethical approval.

Analysis

IBM SPSS Statistics version 22 was used for all data analysis. The data did not conform to a normal distribution therefore nonparametric statistics were implemented.

Results

Demographics

Table 1 here

Clinical outcomes

After controlling for baseline, significant differences were found on quality of life subscales, distress and symptom scores over the course of intervention.

Table 2 here

Service Utilisation

Median duration of time in the service was 232 days (IQR 246). Median number of appointments offered was 18 (IQR 28) with 1 (IQR 4) appointment not attended and 2 (IQR 3) appointments cancelled, corresponding to an overall attendance rate of 80%. 71% of young people missed 0-5 appointments offered, 16% missed 6-10 appointments and 13% of young people failed to attend more than 10 appointments. 36% young people seen by Tier 4 outpatient services during this period were also admitted to the inpatient unit, median duration 30 days (IQR 54). Median number of professionals (including psychiatry, psychology, nursing, dietetics and occupational therapy) involved in each episode of care was 3 (IQR 3).

Characteristics of engagement

Better engaged young people did not differ significantly from those less well engaged with regards to admission scores on clinical outcome measures (table 3), with the exception of negative symptoms within the EPSS cohort. There were no significant differences on deprivation scores or gender. Those who were more easily engaged were significantly younger (Chi^2 (1) = 5.15, p=.023).

Table 3 about here

Engagement and service use

Thresholds of 80%, 85% and 90% attendance were set for the analysis. There was no significant difference in number of appointments offered to the better and less well engaged groups. Once attendance was at the 80% level or above, median duration for those more easily engaged was 224 days (IQR 239) compared to 362 days (IQR 377) for those less well engaged. This difference was significant (Chi^2 (1) 5.26, p = .022). Consequently, the less well engaged group had longer between appointments (Chi^2 (1) = 24.74, p<.001). Less well engaged young people had more professionals involved in their care. At the 90% threshold this difference was significant (Chi^2 (1) 4.91, p = .027). Less

well-engaged young people had more inpatient admissions, but this difference was not significant.

Discussion

Clinical outcomes improved over the course of team interventions. We were unable to control for regression to the mean nor natural fluctuations in the level of psychopathology. Pre-training data was limited. ~~Nor can we~~We cannot therefore attribute positive findings to AMBIT's implementation ~~of AMBIT~~. Variability in practice across the workforce is inevitable, and significant efforts are required to sustain AMBIT practice. Nonetheless, given the level of clinical complexity, the degree of change over time spent with the service is encouraging. Treatment is targeted to reduce distress and symptoms, improve quality of life and facilitate the development of interpersonal processes likely to support recovery. Change across the range of measures is consistent with this philosophy.

The analysis was limited by the nature of available data. In common with other CAMHS, many datasets were incomplete and service level information was obtained from a database maintained by non-clinical administrators. However, our data collection strategy reinforces links between clinical outcomes, team

learning and practice. Outcomes data are incorporated into formulation meetings and clinical reviews, aiding reflections on individuals' progress. Good local practice is recorded in a web-based AMBIT manual. Facilitating dialogue about data within teams is likely to lead to more nuanced understandings of the work undertaken, foster realistic optimism and provide a safe platform for discussion of less positive outcomes (Fuggle et al, 2014).

High attendance rates appear to reflect significant commitment from young people who present with considerable symptomatology and complex social adversities. However, engagement was calculated using a crude measure of attendance, and our data may indicate selection bias: although there is no doubt that the population experiences significant psychopathology, the most hard-to-reach adolescents may not have negotiated Tier 4 referral pathways. Nevertheless, within AMBIT engagement is seen as an interactive process between those seeking help and the supportive clinical network rather than an inherent characteristic of the young person and/or their families. AMBIT promotes supervisory structures~~, which are~~ used locally to encourage reflection on barriers to the development of therapeutic relationships, ~~with teams~~whilst remaining mindful of the need to scaffold relationships within existing social ecologies ~~thereby promoting psychosocial resilience~~.

However, we note the number of professionals involved with each case. Those with the most complex needs must negotiate numerous professional relationships even within mental health services, notwithstanding input from other agencies. LFurthermore, less well engaged young people had more professionals involved in their care and showed a trend towards increased likelihood of inpatient admission. AMBIT promotes team reflection on such processes, explicitly mentalizing clinician's affective states and promoting thoughtful clarity about individual worker's roles. It is likely that poor engagement hinders professionals' work to contain exacerbations of acute presentations and raises staff anxiety. Service interactions inadvertently become urgent crisis-driven responses more likely to involve emergency measures and possible in-patient admission, reinforcing existing negative expectations of help-seeking and perpetuating the cycle of poor engagement (Gumley and Schwannauer, 2006). AMBIT promotes team reflection on such processes, acknowledgingges the impact of clinical dilemmas on keyworkers, who often have to address crises 'out in the field' in highly charged interpersonal contexts. The explicit focus on ensuring clinicians are well connected to the team encourages the use of 'passed-outward discussions' whereby keyworkers engage in a mentalizing discussion about

crises with the team base. Through explicitly mentalizating clinician's affective states, AMBIT encourages thoughtful clarity about individual worker's roles.

Finally, engagement was associated with age and two quality of life subscales but not baseline symptoms or distress with the exception of negative symptoms in the psychosis group. Younger participants are more likely to be accompanied to appointments. It seems plausible that paying greater attention to social functioning/adjustment/support at entry into the service may facilitate engagement. This merits further investigation.

Summary

Despite challenges, we demonstrate the feasibility of establishing locally adapted outcome frameworks within CAMH Tier 4 services. Changes occur over time as predicted by our AMBIT-informed service model ~~which is informed by AMBIT~~. Ensuring that teams think together to make sense of systematic information about their work should facilitate clinical learning (Fuggle et al, 2014). AMBIT provides a theoretical yet pragmatic framework within which to consider front-line tensions of service delivery, such as the promotion of key therapeutic relationships to enhance engagement within multi-modal interventions.

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Appendix

Table 1~~-~~: Demographic Characteristics	
	N=302
Gender (%)	
Male	36
Female	64
Age (median years)	16 (IQR 2) 11-22 years
Scottish Index of Multiple Deprivation Score (%)	
1 (Most deprived)	19
2	19
3	15
4	17
5 (Least deprived)	30
~~Service~~ Team (%)	
ITS	58
EPSS	18
Day Programme	21
Not Specified	3

Formatted Table

Table 2: Median and interquartile range of clinical outcome measures at admission and discharge			
Measure	***Admission*** ***Median (IQR)***	***Discharge*** ***Median (IQR)***	***Significantly different***
Whole Service Measures:			
QoL: Physical	N=105 18 (10.43)	N=50 21 (11.04)	Chi^2 (1) = 6.60, p=.010
QoL: Psychological	N=107 13 (5)	N=50 14 (7.17)	Chi^2 (1) = 11.66 p<.001
QoL: Social	N=107 10 (5.33)	N=50 11.5 (4.33)	ns
QoL: Environmental	N=107 25) (15)	N=50 26.5 (16.75)	Chi^2 (1) = 6.60, p=.010
ITS and Day Programme Measures:			
BYI: Self Concept	N=98 32 (15.25)	N=34 38 (16.25)	Chi^2 (1) = 4.91, p=.027
BYI: Anxiety	N=69 65 (23)	N=20 53 (19)	Chi^2 (1) = 5.53, p=.019
BYI: Depression	N=100 65.5 (22.75)	N=32 60 (22.25)	Chi^2 (1) = 5.31, p= .021
EPSS Measures:			
BDI	N=52 23 (23.75)	N=21 13 (22.50)	ns
PANSS: Positive symptoms	N=48 17 (8.75)	N=33 7 (3.5)	Chi^2 (1) = 29.45, p<.001
PANSS: Negative symptoms	N=48 15 (7.75)	N=33 9 (6)	Chi^2 (1) = 17.78, p<.001
PANSS: General psychopathology	N=48 31 (14)	N=33 22.5 (14.75)	Chi^2 (1) = 10.42, p<.001

Table 3: Median and interquartile range of clinical outcome measures at admission for young people engaged and not engaged (**Engaged defined as attending 80% or more appointments).**

Measure	*Engaged Median (IQR)*	*Difficult to engage Median (IQR)*
Whole Service Measures:		
QOL: Physical*	*N=79* *18 (10)*	*N=15* *11(9.43)*
QOL: Psychological	N=79 13 (8)	N=15 9 (7)
QOL: Social	N=79 10 (5)	N=15 16 (4)
QOL: Environmental*	*N=79* *26(15)*	*N=15* *29 (16)*
ITS and Day Programme Measures:		
BYI: Self Concept	N=63 33 (21)	N=12 30 (18.5)
BYI: Anxiety	N=48 63.5 (26)	N=10 67.5 (37)
BYI: Depression	N=66 65 (23.5)	N=10 74 (29)
EPSS Measures:		
Beck Depression Index	N=27 21 (25)	N=12 29 (18.5)
PANSS: positive symptoms	N=15 13 (10.25)	N=4 18 (7)
PANSS: Negative symptoms*	N=15 13 (7)	N=4 14 (22)
PANSS: General psychopathology	N=16 32.5 (15)	N=5 29 (17)

**Significantly different at p< .05*